

IN THE DRAWINGS:

Figure 1 has been amended to include the reference number (20) which refers to the MD Grooves. Please replace Figure 1 of the drawings with the attached replacement sheet.

REMARKS

Reconsideration of the application as amended is respectfully requested.

Claims 35, 37 and 39 are cancelled and, thus, Applicants submit that the objection to these claims is moot. Thus, claims 1-34, 36, 38 and 40 remain in this application.

Applicants kindly acknowledge the Examiner's indication of allowable subject matter in claims 6, 10, 36 and 40, and claims 9, 16, 17, 24, 25 and 27-29.

In this connection, it is believed that claims 6, 36 and 40 have been amended to overcome the 112 rejections and to include all of the limitations of the base claim and any intervening claims. Claims 9, 16, 17, 24, 28 and 29 have been rewritten to include all of the limitations of the base claim and any intervening claims. Therefore, claims 6, 10, 36 and 40, and claims 9, 16, 17, 24, 25 and 27-29 are in condition for allowance.

In addition, it is believe that the drawings have been amended to overcome the objection thereto.

Also, Applicants submit that claims 2, 4 and 38 have been amended so to overcome the 112 rejections to claims 2-4, 8 and 38.

On the merits, the Examiner rejects claims 1, 4 and 11-13 as allegedly anticipated by Stech (U.S. Patent No. 4,842,905).

Independent claim 1 teaches a structure with an embossed pattern of voids on the bottom surface of the structure for receiving fluid extracted from a product, for example, a paper product. Claim 1 recites in part, an industrial process fabric comprising:

“a substrate having a top surface and bottom surface and a nominal thickness along a plane, said product being carried on the top surface; and

a pattern **embossed** upon the bottom surface of the substrate, and said pattern creating a void for receiving fluid which passes through the substrate.”

The Examiner asserts that Stech, in Figs. 14 and 15, teaches a fabric of molded elements with drainage channels or apertures that may be formed by embossing. Contrary to the Examiner's position, however, it is clear that embossing is not the way these channels/grooves were formed in Stech. Nor is there any teaching as to how they were formed, that is, the text in col. 5, lines 6-10 is not enabling as to this aspect. However, Stech does suggest that the grooves were instead molded in at the time of element manufacture, and not embossed in at a later time.

In this connection, Stech teaches a fabric of molded elements and acknowledges that such a structure must have the ability to bend around rolls of a certain diameter in use on a paper machine (see Fig. 8). It is stated that:

"it is preferred to maintain simple geometric configurations and to incorporate the locking feature. This preference is based upon both the ease of molding less complex configurations which incorporate the interlocking feature and the desirability of assuring fabric integrity" (col. 4, lines 51-56)...[and]

...a plurality of elements will be provided and the adjacent longitudinal edges interconnected to form a fabric. Although there is no minimum distance between tapered projections 72 and recesses 74, it will be understood that a sufficient distance should be maintained to permit flexing of the element 70 when the elements are tessellated" (col. 6, lines 33-39).

In addition, Figs. 10-14 of Stech show that the connection between fabric elements is in the cross-machine direction (CD), and that it is critical that movement especially at these CD "hinge" points is necessary for this fabric to work. It is stated:

"the edges 142 and 144 of the respective elements have been shown as essentially square in order to produce an advantageously paper carrying surface and the edges 146 and 148 have been shown as rounded to assist in running the fabric around the rollers" (col. 7 lines 28-33; see also Fig. 11).

It is also noted that Figs. 14 and 15 of Stech show an embodiment having "thickened" element, that is:

"the gauge of the fabric has been increased by disposing the projections 412 and recesses 414 in a lower plane. Although any of the prior constructions could be made in an equal gauge, the present construction is intended to provide additional machine runners 440 and to provide channeling for drainage and moisture removal...

the runners 440 are spaced along the longitudinal edge of the element 400. The plurality of runners 440 produce a plurality of cavities 442 which are disposed beneath the body portion 410. In this manner, water or moisture drawn through the apertures in the element body may be quickly removed...

the configuration of the trailing edge of the runner 440 will not interfere with assembly or use of the fabric but will provide a constant running and transition surface."
(Col. 8, lines 33-53).

Accordingly, the foregoing text suggest that if there are "grooves" in Stech's fabric, they were molded in at the time of element manufacture, not embossed in at a later time. That is, the grooves must have existed before assembly of the fabric. Otherwise how could they "not interfere with assembly," as stated in col. 8, lines 50-53?

In addition, Fig. 14 and the supporting text suggest that the lands continue right through the connection area, as they would have to in order to function in the intended manner. Note also that the grooves/lands and connecting means are both in the lower plane of the "thicker" element. Consequently, the grooves could not have been "pressed in" via embossment. If they were, and the grooves are continuous, and are in the same plane as the connecting means and thus pass therethrough, then the connecting means would no longer have the ability to flex to allow the fabric to move around rollers. As an analogy, consider a door hinge that flexes around the hinge pin. Now crimp it with a vise. You don't even have to "dent" the pin. Just crimping the hinge itself will prevent the hinge from moving.

In view of the foregoing, embossing is not the way grooves were formed in Stech. In addition, Applicants' fabric does not require to be made thicker than normal, as required in Stech, in order to have the backside grooves/voids, and the grooves in no way inhibit any

operational characteristic. Moreover, the pattern of the present invention, as set forth in claim 1 is put in via embossing. Accordingly, claim 1, and claims 4 and 11-13 dependent therefrom, are distinguishable from Stech.

The Examiner also rejects claims 1, 4 and 11-13 as anticipated by Lefkowitz (U.S. Patent No. 4,740,409), and asserts that, in Fig. 4 of the reference, a nonwoven fabric is fed between rolls including a heated bottom roll with pin extremities (41) to form drainage holes in the bottom of the fabric by melting the matrix material.

Contrary to the Examiner's assertion, as seen in Figs. 3 and 4, the "pinned roll" is really a circular mold whose surface roughly looks like a waffle iron. It is noted that the voids between pins in the circumferential, or machine direction (MD), contain yarns that are fully encapsulated by resin. In addition, the voids in the cross machine direction (CD) allow resin to flow to form connections between the resin encapsulated yarns. Note further that some of the pins are long enough so that there are vertical voids for water removal. Consequently, these are the only dewatering voids taught, and their function is described at col. 7, lines 40-47 of Lefkowitz:

"Water, having flowed through a fine porous sheet contact layer, may only pass vertically into the void spaces between machine direction and cross machine direction fabric members since such void spaces are not interconnected but, rather, are surrounded by matrix material which forms effective barriers to the transmission of water in the transverse plane, in particular, the machine direction."

Thus, in Lefkowitz, any voids formed are via molding at the time of substrate manufacture, and not later by embossing. Although Lefkowitz mentions that the surface of the heated top roll may be embossed to impart a pattern to the fabric as it is formed (col. 7, lines 4-6), Lefkowitz it is a surface pattern, not a backside pattern and fails to teach what the pattern is used for. Finally, it is taught as a simultaneous process of fabric formation and embossing.

The Examiner also rejects claims 1-4, 7, 8, 11-13, and claims 14, 15, 18-23, 26, 30-34, 37 and 38, based on Johnson (U.S. Patent No. 6,140,260). Claim 14 is similar to claim 1 (quoted earlier) but is directed to a two-substrate fabric comprising:

“a first substrate having a top surface and a bottom surface and a nominal thickness along a plane, said product being carried on the top surface;

a first pattern embossed upon the bottom surface of the first substrate, said first pattern creating voids for receiving fluid which passes through the fabric;

a second substrate having a top surface and a bottom surface and a nominal thickness along a plane;

a second pattern embossed upon the second substrate, said second pattern creating voids for receiving fluid which passes through the fabric: and

wherein said bottom surface of the first substrate and the top surface of the second substrate being in an adjoining relationship and said first and second substrates being joined together.”

The Examiner asserts that Johnson teaches, in Fig. 3, a papermaking felt having a hydrophobic flow control layer rendered porous by embossments for dewatering. Contrary to the Examiner's assertion, however, Johnson teaches incorporation of this nonwoven layer as a distinct layer that is added into a press fabric during manufacture of that substrate. (See col. 3, lines 66-67 to col. 4, lines 1-44). More to the point, the embossments in this previously prepared sheet are said to be not important as to orientation nor to have any function other than to give this nonwoven sheet enough integrity to be handled as it is incorporated into a press fabric. (see col. 4, lines 45-62). Finally, this layer is described as a very lightweight sheet of material, and consequently, any embossment would not have adequate void volume to contribute as a receptor for fluid. In fact, these embossments are taught as even hinder dewatering.

The Examiner also rejects claims 1-4 and 11-13 as unpatentable over Beaumont et al. (U.S. Patent No. 3,399,111), and asserts that Beaumont teaches a supplemental belt having perforations and protuberances formed by embossing for dewatering.

Initially, Applicants note that regardless of whether this belt is used in the forming or press section, Beaumont fails to teach any patterns in the belt made by any method to provide void volume for water removal. In addition, the reference teaches that this belt, even if three sheets thick, is only 0.042 inches. However, today's press fabrics and those of the present invention are a minimum of 2.5 times that thickness and preferably more like 0.150 inches thick. Consequently, with one third being batt, and adding that to the Beaumont belt, this is still below an effective minimum use thickness which is also related to void volume and water removal capacity. That is, there's has to be some thickness so that the channels have enough volume to accept the water removed.

In addition, whether used in forming and/or pressing, the "voids" taught in Beaumont are punched in and are so small as to effectively accept and hold water via capillary action. (See col. 16, lines 3-30). Note further that embossing is only mentioned as a way to make protuberances that form flow paths to apertures. (see col. 12, lines 26-42). However, since there must be continuous MD lands for this structure to have adequate tensile MD strength, there are no apertures that are continuous in either the MD nor CD directions. Finally, the channels between apertures are not embossed in.

The Examiner lastly rejects claims 1-3, 5 and 11-13 under 35 U.S.C. 103(a) as being unpatentable over Botelho (U.S. Patent No. 6,554,963) in view of Stech or Lefkowitz or Beaumont.

The Botelho patent is disqualified as §103 prior art to the present application under the provisions of 35 U.S.C. 103(c). Under the provisions of 35 U.S.C. 103(c), as amended on November 29, 1999, subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f) and (g) of 35 U.S.C. 102, shall not preclude patentability under §103 where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person or organization.

The Botelho patent and the present application were, at the time the present invention was made, subject to an obligation of assignment to the same organization, i.e., Albany International Corp. Such obligation is evidenced by the recording of assignment documents in the U.S. Patent and Trademark Office for the Botelho patent and in the present application. The Botelho patent issued on April 29, 2003, which was after the filing date of the present application of September 26, 2001. Thus, the Examiner has relied upon Botelho in a rejection under 35 U.S.C. 103 through 35 U.S.C. 102(e).

The Guidelines Concerning the Implementation of Changes to 35 U.S.C. 102(g) and 103(c) in the American Inventors Protection Act of 1999 explain that the change to §103(c) applies to any patent application filed on or after November 29, 1999. As the filing date of the present application is September 26, 2001, it falls into this category, and the changes to §103(c) apply to the present application. Thus, Botelho is disqualified as §103 prior art in this case.

Accordingly, none of the references teach a structure with an embossed pattern creating voids on the bottom surface of the structure for receiving fluid extracted from a product. And, the references fail to disclose, in particular, an “industrial process fabric in the form of an endless loop which functions in the manner of a conveyor in making product from which fluid is being

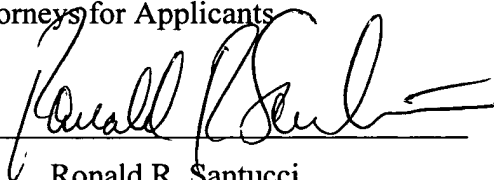
extracted whilst being carried on the fabric, comprising a substrate having a top surface and bottom surface and a nominal thickness along a plane, said product being carried on the top surface; and a pattern embossed upon the bottom surface of the substrate, said pattern creating a void for receiving fluid which passes through the substrate.”

Thus, in view of the forgoing, it is respectfully submitted that the present application is in condition for allowance. An early notice to this effect is respectfully solicited.

Please charge our Deposit Account No. 50-0320 for any additional fees that may be necessary in connection with the filing of this amendment.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP
Attorneys for Applicants

By: 

Ronald R. Santucci
Reg. No. 28,988
Tel. (212) 588-0800